



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

February 9, 2015

Mr. Kelvin Henderson  
Site Vice President  
Catawba Nuclear Station  
Duke Energy Carolinas, LLC  
4800 Concord Road  
York, NC 29745

SUBJECT: CATAWBA NUCLEAR STATION, UNITS 1 AND 2: REQUEST FOR  
ADDITIONAL INFORMATION REGARDING LICENSE AMENDMENT  
REQUEST TO SUPPORT A MEASUREMENT UNCERTAINTY RECAPTURE  
POWER UPRATE FOR CATAWBA, UNIT 1 (TAC NOS. MF4526 AND MF4527)

Dear Mr. Henderson,

By letter dated June 23, 2014 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14176A109), Duke Energy Carolinas, LLC (Duke) submitted a license amendment request to increase the Catawba, Unit 1, authorized core power level from 3,411 megawatts thermal (MWt) to 3,469 MWt, an increase of approximately 1.7 percent rated thermal power.

The U.S. Nuclear Regulatory Commission (NRC) staff has reviewed the licensee's submittal and determined that additional information is needed in order to complete the NRC staff's review. Enclosure 1 describes this request for additional information (RAI).

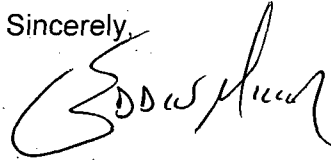
The NRC staff notes that, as identified in SRXR – RAI 8, your original submittal contained neutron fluence values that were calculated using a code not currently approved for Catawba. As discussed in with your staff, the NRC can incorporate the review of a new fluence methodology into the measurement uncertainty recapture review; however, the NRC staff estimates that this will result in an approximate 8 month delay in the review schedule.

K. Henderson

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If you have any questions, please call me at 301-415-2481.

Sincerely,

A handwritten signature in black ink, appearing to read "G. Edward Miller". The signature is fluid and cursive, with the first name "G." being prominent.

G. Edward Miller, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION  
LICENSE AMENDMENT REQUEST TO SUPPORT THE  
MEASUREMENT UNCERTAINTY RECAPTURE POWER UPRATE

DUKE ENERGY CAROLINAS, LLC

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

TAC NOS. MF4328 AND MF4329

By letter dated June 23, 2014, Duke Energy Carolinas, LLC (Duke), the licensee for Catawba Nuclear Station, Units 1 and 2 (Catawba), requested a measurement uncertainty recapture (MUR) power uprate (Agencywide Documents Access and Management System (ADAMS) Accession No. ML14176 A109). The proposed revision would increase the Catawba, Unit 1, authorized core power level from 3411 megawatts thermal (MWt) to 3469 MWt, an increase of 1.7 percent rated thermal power.

Based on the review of the amendment request, the U.S. Nuclear Regulatory Commission (NRC) staff has determined that additional information is required regarding the MUR power uprate

**Reactor Systems Branch (SRXB) – RAI 8**

The RAPTOR3G code used to calculate fluence for MUR conditions does not appear to be approved by the NRC for use in this scenario. The NRC staff requests that the licensee provide justification for the use of RAPTOR3G for fluence calculations for MUR conditions, or provide an alternative fluence calculation using an NRC approved method.

**SRXB – RAI 9**

In response to SRXB – RAI 1, Duke indicated that it was Catawba's "intention" to directly trend different measurements of plant power. Please clarify the use of the word intention.

**SRXB – RAI 10**

Please indicate whether the Leading Edge Flow Meter transducers have been evaluated for environmental qualification with respect to the radiological environment in which they will be used.

Enclosure

### **Steam Generator and Chemical Engineering Branch (ESGB) – RAI 3**

Describe the evaluations performed to assess the potential impact of the power uprate on steam generator (SG) tube vibration response and consequential wear degradation (wear at tube support locations, tube-to-tube wear) and fatigue. This should include a description of the impact of the power uprate on average and peak thermal hydraulic parameters (e.g., gap velocities, dynamic pressures, void fractions, and steam quality) and how these were considered in assessing tube wear and fatigue performance. This should also include a discussion of whether these thermal hydraulic conditions are within the envelope of successful experience at other plants of similar design and size. "Successful experience" in this context refers to avoiding rapidly developing degradation mechanisms that cannot be successfully managed through the SG program.

K Henderson

- 2 -

If you have any questions, please call me at 301-415-2481.

Sincerely,

/RA/

G. Edward Miller, Project Manager  
Plant Licensing Branch II-1  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosure: As stated

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**ADAMS Accession No. ML15030A460**

\*Via E-mail \*\*Via memo

OFFICE	NRR/LPLI-1/PM	NRR/LPL2-1/LA	NRR/DSS/SRXB	NRR/DE/ESGB	NRR/LPL2-1/BC
NAME	GEMiller	SFiguroa	CJackson*	GKulesa**	RPascarelli
DATE	02/05/15	02/04/15	02/05/15	01/07/14	02/09/15

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